CLAIMS

What is claimed is:

1. A system to log a wellbore, comprising:

a logging tool including at least one down hole power supply to power the logging tool and adapted to be deployed in a wellbore;

the logging tool adapted to send data from the wellbore;

a fiber optic line in optical communication with the logging tool; and

the logging tool transmitting the data on a real time basis through the fiber optic line.

2. The system of claim 1, wherein the data comprises at least one measurement of the wellbore environment.

3. The system of claim 1, wherein the data comprises status data from the logging tool.

4. The system of claim 1, wherein the fiber optic line is deployed within a conduit.

5. The system of claim 4, wherein the conduit is a tube.

6. The system of claim 4, wherein the logging tool is attached to the conduit.

7. The system of claim 4, wherein the conduit is deployed through a stuffing box installed on a wellhead.

8. The system of claim 7, wherein the stuffing box forms a seal with the outside wall of the conduit.

9. The system of claim 8, wherein the outside wall of the conduit is slidingly sealingly engaged with at least one additional seal located below the stuffing box.

10. The system of claim 4, wheren an outside wall of the conduit is slidingly sealingly engaged with at least one seal located in a wellhead.

11. The system of claim 4, wherein the conduit is deployed from a reel located at a surface of the wellbore.

12. The system of claim 11, wherein the reel is located on a vehicle.

13. The system of claim 11, wherein the logging tool is deployed and retrieved multiple times in the same wellbore.

14. The system of claim 12, wherein the logging tool is deployed and retrieved from multiple wellbores.

15. The system of claim 11, further comprising:

an optical slip ring functionally associated with the reel and the fiber optic line;

a receiver attached to the fiber optic line at the surface;

the optical slip ring adapted to allow the transmission of optic data to the static receiver while the conduit and fiber optic line therein move on the reel in and out of the wellbore,

16. The system of claim 1, wherein the fiber optic line is optically connected to a receiver adapted to receive the data.

17. The system of claim 16, wherein the receiver processes the data to be made available to an operator.

18. The system of claim 1, wherein a converter converts the data into optical signals to be transmitted through the fiber optic line.

19. The system of claim 18, wherein the converter is located downhole.

20. The system of claim 18, wherein a transmitter is located downhole and transmits the optical signals through the fiber optic line.

21. The system of claim 18, wherein:

a transmitter is located at a surface of the wellbore;

a modulator is located downhole;

the transmitter transmits an optical signal to the modulator; and

the modulator modulates the optical signal so that the return optical signal is etched with the data.

22. The system of claim 1, wherein:

a transmitter is located at a surface of the wellbore;

a modulator is located downhole;

the transmitter transmits an optical signal to the modulator; and

the modulator modulates the optical signal so that the return optical signal is etched with the data.

23. The system of claim 1, wherein the fiber optic line is installed into the conduit by way of fluid drag once the conduit is deployed in the wellbore.

24. The system of claim 1, wherein the fiber optic line acts as a distributed temperature sensor.

25. The system of claim 4, wherein a signal can be sent through the conduit to actuate a first downhole tool.

26. The system of claim 25, wherein the signal is applied pressure.

27. The system of claim 25, wherein the signal is a pressure pulse.

28. The system of claim 25, wherein the downhole tool is a packer.

29. The system of claim 25, wherein the downhole tool is a perforating gun.

30. The system of claim 25, wherein data is simultaneously sent through the fiber optic line.

31. The system of claim 25, wherein an optical signal can be sent through the fiber optic line to actuate a second downhole tool.

32. The system of claim 31, wherein the optical signal and the signal through the conduit occur simultaneously.

33. The system of claim 1, wherein a plurality of fiber optic lines are in optical communication with the logging tool.

34. A method of logging a wellbore, comprising:

deploying a logging tool in a wellbore;

powering the logging tool with a downhole power source

sending data from the logging tool; and

transmitting the data to a surface of the wellbore on a real time basis through a fiber optic line that is in optical communication with the logging tool.

35. The method of claim 34, wherein the data comprises at least one measurement of the wellbore environment.

36. The method of claim 34, wherein the data comprises status of the logging tool.

37. The method of claim 34, further comprising deploying the fiber optic line within a conduit.

38. The method of claim 37, wherein the conduit is a tube.

39. The method of claim 37, further comprising attaching the logging tool to the conduit.

40. The method of claim 37, further comprising deploying the conduit through a stuffing box installed on a wellhead.

41. The method of claim 40, further comprising forming a seal between the stuffing box and the outside wall of the conduit.

42. The method of claim 37, further comprising deploying the conduit from a reel located at a surface of the wellbore.

43. The method of claim 42, further comprising positioning the reel on a vehicle.

44. The method of claim 42, further comprising deploying and retrieving the logging tool multiple times in the same wellbore.

45. The method of claim 43, further comprising deploying and retrieving the logging tool in multiple wellbores.

46. The method of claim 34, further comprising receiving the data in a receiver that is optically connected to the fiber optic line.

47. The method of claim 46, further comprising processing the data to be shown to an operator.

48. The method of claim 34, further comprising converting the data into optical signals to be transmitted through the fiber optic line.

49. The method of claim 48, further comprising locating the converter downhole.

50. The method of claim 48, further comprising locating a transmitter downhole that transmits the optical signals through the fiber optic line.

51. The method of claim 48, further comprising:

transmitting an optical signal from a transmitter located at a surface of the wellbore to a modulator located downhole; and

modulating the optical signal so that the return optical signal is etched with the data.

52. The method of claim 34, further comprising installing the fiber optic line into the conduit by way of fluid drag once the conduit is deployed in the wellbore.

53. The method of claim 34, further comprising taking a distributed temperature measurements by use of the fiber optic line.

54. The method of claim 37, further comprising sensing a signal through the conduit to actuate a downhole tool.

55. The method of claim 54, wherein the signal is applied pressure.

56. The method of claim 54, wherein the signal is a pressure pulse.

57. The method of claim 54, wherein the downhole tool is a packer.

58. The method of claim 54, wherein the downhole tool is a perforating gun.

59. The method of claim 34, wherein a plurality of fiber optic lines are in optical communication with the logging tool.

60. A system to be deployed in a wellbore, comprising:

a continuous conduit extending within the wellbore;

a fiber optic line disposed within the conduit and adapted to transmit optical signals therethrough;

wherein a signal is traveling through the conduit simultaneously with an optical signal traveling through the fiber optic line.

61. The system of claim 60, wherein the signal traveling through the conduit is a pressure signal.

62. The system of claim 61, wherein the pressure signal is applied pressure.

63. The system of claim 61, wherein the pressure signal is a pressure pulse.

64. The system of claim 60, wherein the optical signal represents data.

65. The system of claim 60, wherein the optical signal is a signal to actuate a first downhole tool.

66. The system of claim 65, wherein the signal through the conduit is a signal to actuate a second downhole tool.

67. The system of claim 60, wherein the signal through the conduit is a signal to actuate a downhole tool.

68. A method for transmitting signals in a wellbore, comprising:

deploying a continuous conduit within the wellbore;

disposing a fiber optic line within the conduit, the fiber optic line adapted to transmit optical signals therethrough; and

transmitting a signal through the conduit at the same time an optical signal is transmitted through the fiber optic line.

69. The method of claim 68, wherein the transmitting step comprises transmitting a pressure signal through the conduit.

70. The method of claim 69, wherein the pressure signal is applied pressure.

71. The method of claim 69, wherein the pressure signal is a pressure pulse.

72. The method of claim 68, wherein the optical signal represents data.

73. The method of claim 68, further comprising triggering the actuation of a first downhole tool with the optical signal.

74. The system of claim 73, further comprising triggering the actuation of a second downhole tool with the signal.

75. The system of claim 68, further comprising triggering the actuation of a second downhole tool with the signal.

76. A method of transmitting optical signals through a fiber optic line, comprising:

deploying the fiber optic line in a subterranean wellbore;

transmitting an optical signal representing data through the fiber optic line; and

simultaneously transmitting another optical signal through the fiber optic line for activating a downhole tool.

77. A system to be deployed in a wellbore, comprising:

a continuous conduit extending within the wellbore;

the continuous conduit being deployed from a reel;

a fiber optic line disposed within the conduit and adapted to sense a physical parameter;

wherein the conduit is adapted to be deployed and retrieved from a plurality of wellbores by spooling and unspooling the reel.

78. The system of claim 77, wherein the physical parameter is temperature or strain.

79. The system of claim 78, wherein the physical parameter is measured along the length of the fiber optic line.

80. The system of claim 77, wherein a battery powered memory tool is attached to the conduit to measure another physical parameter.

81. The system of claim 80, wherein the another physical parameter is pressure.

82. A method for use in a wellbore, comprising:

unspooling a conduit from a reel so as to deploy the conduit within a wellbore;

housing an optical fiber in the conduit;

sensing a physical parameter by use of the optical fiber;

spooling the conduit onto the reel so as to retrieve the conduit from the wellbore so that the conduit may be deployed and retrieved from a plurality of wellbores.

83. The method of claim 82, wherein the physical parameter is temperature or strain.

84. The method of claim 83, wherein the physical parameter is measured along the length of the fiber optic line.

85. The method of claim 82, further comprising measuring a physical parameter with a battery powered memory tool attached to the conduit.

86. The method of claim 85, wherein the another physical parameter is pressure.